

REMARKS

Claims 1-13 are pending.

As required by the Examiner, FIGS. 13A, 13B, 14 and 15A have been designated with the legend "Prior Art."

The applicant thanks the Examiner for indicating that claims 3, 8 and 13 include allowable subject matter.

The remaining claims were rejected under 35 U.S.C. § 103 as unpatentable over the combination of U.S. Patent No. 6,689,641 (Ohta et al.) and U.S. Patent No. 6,602,803 (Yew et al.). As discussed below, applicant respectfully requests reconsideration.

Independent claim 1 recites a method that includes affixing and electrically connecting a circuit element to a conductive wiring layer, and irradiating plasma onto the conductive wiring layer, including the circuit element.

The Ohta et al. patent discloses a method of producing a wiring board. The Office action relies on the Yew et al. patent for its disclosure of attaching a semiconductor chip 10 to a substrate 11 and using plasma irradiation. According to the Yew et al. patent, it is desirable to include a polyimide layer 12 over the surface of the chip 10 (col. 5, lines 20-30). As described in the Yew et al. patent, the reason for the plasma irradiation relates to improving adhesion between the polyimide layer 12 and the substrate 11 (col. 5, lines 31-36).

The Office action alleges (at page 3, lines 5-8) that, according to the Yew et al. patent, plasma irradiation is applied to a conductive wiring layer "inherently at [the] surface of [a] chip." Applicant respectfully disagrees.

First, details of the chip 10 are not disclosed in the Yew et al. patent. Second, in view of the way the chip 10 (or 50 in FIG. 5) is attached to the substrate 11 (or 51 in FIG. 5), it is clear that the only metallization on the surface of the chip is bonding pads 10b (or 50b in FIG. 5). Third, the chip 10 would correspond (if at all) to the "circuit element" feature recited in pending

claim 1. Therefore, any conductive material on the surface of the chip 10 does not correspond to the “conductive wiring layer” recited in claim 1.

Furthermore, as discussed below, there would have been no “clear and particular” motivation to combine the disclosures of the Ohta et al. and Yew et al. patents to obtain the subject matter of the pending claims as required by the Court of Appeals for the Federal Circuit. *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Teleflex, Inc. v. Ficosa North Am. Corp.*, 63 USPQ2d 1374 at 1387 (Fed. Cir. 2002) (The showing of the motivation to combine must be “clear and particular.”) A contrary conclusion would be precisely the type of improper hindsight the Federal Circuit has warned against. *Ecologchem, Inc. v. Southern California Edison Co.*, 56 USPQ2d 1065, 1072-73 (Fed. Cir. 2000). (“Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight.”)

In particular, it is clear from the Yew et al. patent that the plasma irradiation occurs prior to attaching the chip 10 to the substrate 11. For example, that patent refers to the polyimide being “preactivated” in order to allow the desired affinity to adhesion to take place (col. 5, lines 31-36). Therefore, even if one were to somehow combine the disclosure of the Yew et al. patent with the disclosure of the Ohta et al. patent, that would only have suggested plasma irradiating the semiconductor chip prior to attachment to a substrate so as to improve the adhesion. There would have been no suggestion of plasma irradiating a conductive wiring layer that forms part of a substrate or board to which the semiconductor chip is to be attached.

At least for the foregoing reasons, applicant submits that all the pending claims are patentable over the cited references.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or

concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Claim of Priority

Based on paragraph 12 of the "Office Action Summary," applicant understands that the PTO has received all certified copies of the priority document(s). If that is incorrect, applicant requests the Examiner to contact the undersigned attorney.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 10/5/04

Samuel Borodach
Samuel Borodach
Reg. No. 38,388

Fish & Richardson P.C.
Citigroup Center
52nd Floor
153 East 53rd Street
New York, New York 10022-4611
Telephone: (212) 765-5070
Facsimile: (212) 258-2291

Applicant : Ryosuke Usui et al.
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Amendments to the Drawings:

The attached replacement sheets of drawings includes changes to FIGS. 13A, 13B, 14 and 15A and replaces the original sheets that include those figures.

FIGS. 13A, 13B, 14 and 15A have been designated with the legend "Prior Art."

Attachments following last page of this Amendment:

Replacement Sheet (2 pages)